Amendments to the Drawings:

The attached sheet of drawings include changes to Figure 1. This sheet, which includes only Figure 1, replaces the original sheet including only Figure 1.

Attachment: Replacement Sheet

REMARKS

Upon entry of this Amendment, claims 1, 3-7 and 9 are pending. By way of this Amendment, claims 1, 3, 4, 5, 6, 7 and 9 are amended, claims 2, 8 and 10 are canceled, and claims 11 and 12 are added. The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

Amendments to the Specification

The specification was objected to for containing an informality. Applicant has amended the specification in the manner suggested by the Examiner. Applicant thanks the Examiner for bringing the informality to Applicant's attention.

Applicant respectfully submits that no new matter has been added, and Applicant respectfully requests that the objection to the specification be withdrawn.

Amendments to the Drawings

Figure 1 of the drawings was objected to for failing to show the clock signal as referenced in the specification. Figure 1 has been amended to show exemplary waveforms of digital signals S1 and S2, where digital signal S1 is the clock signal provided to the second counter 4, as recited in the specification at page 6, lines 28-29. Applicant has also amended Figure 1 to include an "arrow head" abutting the second counter 4 on the line extending from S1 to the second counter 4.

Applicant respectfully submits that no new matter has been added, and Applicant respectfully requests that the objection to the drawings be withdrawn.

Rejections Under 35 U.S.C. § 103

Claims 1, 3-7 and 9 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Pat. No. 4,350,950 to Waldmann et al. (hereinafter "Waldmann") in view of U.S. Publication 2003/00117181 to Powell et al. (hereinafter "Powell").

Applicant respectfully submits that Waldmann and Powell fail, individually and collectively, to at the very least disclose, teach, or suggest that "the ratio of the first and second frequency is calculated by means of a regression from pairs of intermediate count values corresponding to different numbers of samples." Applicant calculates the ratio of the first and the second frequency from more than two pairs of intermediate count values. The ratio is based on a regression from pairs of intermediate count values corresponding to a different number of samples. In other words, pairs of intermediate count values corresponding to fractions of different lengths of the overall measuring time are used to calculate the ratio. In particular, the ratio is determined from pairs of intermediate values based on regression. Since pairs of count values corresponding to different number numbers of samples are used, the overall measuring interval can be kept short. Regression using these pairs of intermediate count values enhances the accuracy of the measurement.

Claim 1 has been amended to include the limitations of claim 2 and to further define the claim by having the ratio of the first and second frequency calculated by means of a regression. Independent claims 6 and 9 have been amended in a manner that is similar, but not identical, to the amendment of claim 1.

Amended claim 1 is as follows:

Electronic circuit for determining a ratio of a first frequency of a first signal and a second frequency of a second signal, the electronic circuit comprising:

a first counter and a second counter;

a sampling means for sampling first intermediate count values of the first counter when the second counter reaches preset second intermediate count values such that the first counter is sampled under the control of the second counter;

wherein the first and second intermediate count values form a plurality of pairs of intermediate count values of the first and second counters;

wherein, during the sampling of the first intermediate count values, the first and second counters continue counting; and

a calculation unit for determining the ratio of the first and second frequencies on the basis of the plurality of pairs of intermediate count values;

wherein *more than two pairs of intermediate count values are used* by the calculation unit for *determining the ratio* of the first and second frequencies;

wherein the ratio of the first and second frequencies is *based on a regression* from pairs of intermediate count values *corresponding to different numbers of samples*.

(Emphasis added.)

Waldman fails to disclose, teach or suggest improving the accuracy of the measured frequency by applying regression to pairs of intermediate count values, where the pairs of intermediate count values correspond to a different number of samples. Waldmann discusses a method and apparatus that determines a "measured frequency" of a signal over a prolonged period of time (multiple periods of the signal) and determines an "instantaneous frequency" of the signal based on a short period of time (e.g., some fraction of the prolonged period of time). (Col. 3, lines 5 -10.) Assume the "prolonged period of time" is made up of N "short period of times." Waldman teaches against determining the "measured frequency" based on a mean value of the "instantaneous frequencies" because the accuracy of the "mean value" is improved proportional to the square root of the number of instantaneous frequencies, i.e., the improvement in the accuracy improves proportional to $\sqrt{N}$. Waldman teaches that by calculating the "measured frequency" from the prolonged period of time, the accuracy of the measured frequency improves linearly with the number (N) of short periods of time. (Col. 3, lines 20-30.) In other words, Waldman teaches improving the accuracy of the measured frequency by increasing the duration of the prolonged period of time.

Powell fails to disclose, teach or suggest improving the accuracy of the measured frequency by applying regression to pairs of intermediate count values, where the pairs of intermediate count values correspond to a different number of samples. Powell discusses a method of measuring a frequency of a signal, where the accuracy of the measurement is "dependent only upon a reference timer clock" (paragraph [0030]. In particular, Powell discloses a method of determining the frequency of the signal using a "start phase" and an "end phase." The start phase and the end phase have the same number of samples or, in other words, each phase has the same duration, as measured by the reference timer clock. (See Figure 3; paragraphs [0034]-[0037]. In other words, the start phase and the end phase have the same number of samples, which is unlike claim 1, where the ratio is determined from pairs of intermediate count values corresponding to different numbers of samples.

For at least the reasons provided above, Applicant respectfully submits that Waldman and Powell fail, individually and collectively, to disclose, teach or suggest at least

determining "the ratio" by applying regression to pairs of intermediate count values, where the pairs of intermediate count values correspond to a different number of samples. Therefore, Applicant respectfully requests that the rejection of claim 1 be withdrawn.

For at least the reason that independent claims 7 and 9 have been amended to recite limitations similar, but not identical, to limitations recited in claim 1, Applicant respectfully requests that the rejection of claim 7 and 9 be withdrawn.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

SEED Intellectual Property Law Group PLLC

/Eric M. Ringer, Ph.D./
Eric M. Ringer, Ph.D.
Registration No. 47,028

EMR:wt

Enclosure:
1 Sheet of Replacement Drawing (Figure 1)

701 Fifth Avenue, Suite 5400
Seattle, Washington 98104
Phone: (206) 622-4900
Fax: (206) 682-6031

1336981_1.DOC